



## Complete Summary

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### TITLE

Heart failure in adults: percent of adult patients with a diagnosis of heart failure (HF) who are on an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) at discharge, or before/at the time of the clinic visit.

### SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Heart failure in adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Jun. 111 p. [198 references]

## Measure Domain

### PRIMARY MEASURE DOMAIN

#### Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to assess the percent of adult patients with a diagnosis of heart failure (HF) who are on an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) at discharge, or before/at the time of the clinic visit.

### RATIONALE

The priority aim addressed by this measure is to optimize the pharmacologic treatment of patients with heart failure (HF) to reduce the mortality and morbidity from HF.

### PRIMARY CLINICAL COMPONENT

Heart failure (HF); angiotensin-converting enzyme (ACE) inhibitor, angiotensin receptor blocker (ARB)

#### DENOMINATOR DESCRIPTION

Number of patients with heart failure (HF) whose medical records are reviewed (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### NUMERATOR DESCRIPTION

Number of patients with heart failure (HF) from the denominator who are currently on an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

### Evidence Supporting the Measure

#### EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Heart failure in adults.](#)

### Evidence Supporting Need for the Measure

#### NEED FOR THE MEASURE

Unspecified

### State of Use of the Measure

#### STATE OF USE

Current routine use

#### CURRENT USE

Internal quality improvement

### Application of Measure in its Current Use

#### CARE SETTING

Physician Group Practices/Clinics

## PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

## LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Group Clinical Practices

## TARGET POPULATION AGE

Age greater than or equal to 18 years

## TARGET POPULATION GENDER

Either male or female

## STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

There are an estimated 4.9 million individuals currently diagnosed with heart failure (HF), 550,000 new cases diagnosed annually, 1 million people hospitalized annually (including readmission rates of 30 to 60%), and over 260,000 annual deaths from HF. From 1979 to 2000, HF death rates have increased 148% and hospital discharges have increased 165%.

### EVIDENCE FOR INCIDENCE/PREVALENCE

Institute for Clinical Systems Improvement (ICSI). Heart failure in adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Jun. 111 p. [198 references]

### ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

### BURDEN OF ILLNESS

See "Incidence/Prevalence" field.

### UTILIZATION

See "Incidence/Prevalence" field.

### COSTS

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Living with Illness

### IOM DOMAIN

Effectiveness

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Adult patients 18 years of age or older diagnosed with heart failure (HF)

From the medical group's claims/encounter (billing) data or from appointment lists (if billing data are inaccessible), identify all patients age 18 and older with one or more visits for HF in the quarter. From this pool of patients unique within that quarter, randomly select 20 patients for each month.

Patients should be unique within each quarter, but patients can repeat from one quarter to the next.

Patients may be on other medications, in addition to the angiotensin-converting enzyme (ACE) inhibitor.

See "Measurement Tool" -- Optional Medical Record Review Format for ACE Inhibitor Use in the original measure documentation, as an example.

For groups without access to billing information, a process similar to the following may be helpful:

1. Determine the beginning and ending dates of the quarter, a three month period.
2. At the end of the first quarter, review Month 1's appointment lists for people who had one or more visits for HF. Suppose there were 25 people in Month 1. Randomly select 20 people and review their records, using the attached form (refer to the original measure documentation).
3. At the end of the second month of the quarter, review Month 2's appointment lists for people who had visits for HF. Suppose there were 30 people in Month 2. Make a list of those 30 names, deleting any patients who had been reviewed in Month 1. Suppose three people seen in Month 2 had been reviewed in Month 1. These three people are deleted from the 30, leaving 27

- potential people to review. Randomly select 20 people and review their records, using the attached form (refer to the original measure documentation).
4. At the end of the third month of the quarter, review Month 3's appointment lists for people who had visits for HF. Suppose there were 28 people in Month 3. Make a list of those 28 names, deleting any patients who had been reviewed in Month 1 or Month 2. Suppose five people seen in Month 3 had been reviewed in Month 1 or Month 2. These five people are deleted from the 28, leaving 23 potential people to review. Randomly select 20 people and review their records, using the attached form (refer to the original measure documentation).
  5. At the start of the next quarter, start the process over with Step 2. Do not worry about including people who had been reviewed in the previous quarter.

#### Analysis:

Count all the abstraction forms in which the patient had HF

##### Question #1

Documentation of diagnosis of HF at this visit or within the last six months [Yes/No/New York Heart Association (NYHA) classification]. Refer to the Optional Medical Record Review Format for ACE Inhibitor Use. This will be the denominator.

From these forms, count all in which the patient is on an ACE Inhibitor

##### Question #2

Documentation of patient on ACE inhibitor at this visit or within the last six months: (Drug should be documented: On that visit day OR within the past six months OR on the last recorded medication list) [Yes/No/ACEI dose]. Refer to the Optional Medical Record Review Format for ACE Inhibitor Use. This will be the numerator.

Ordinarily, the sample would be drawn quarterly; data would be abstracted monthly.

#### DENOMINATOR SAMPLING FRAME

Patients associated with provider

#### DENOMINATOR INCLUSIONS/EXCLUSIONS

##### Inclusions

Number of patients with heart failure (HF) whose medical records are reviewed\*

\*Patients age 18 and older with HF as defined by: one or more visits with any (primary or secondary) diagnosis of HF (International Classification of Diseases, Ninth Revision [ICD-9] code 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.0, 428.1, 428.2, 428.3, 428.4, or 428.9) in the last quarter.

Chart documentation of a left ventricular ejection fraction (LVEF) less than 40% or a narrative description of left ventricular function (LVF) consistent with moderate or severe systolic dysfunction.

Exclusions  
Unspecified

#### DENOMINATOR (INDEX) EVENT

Clinical Condition  
Encounter

#### DENOMINATOR TIME WINDOW

Time window is a fixed period of time

#### NUMERATOR INCLUSIONS/EXCLUSIONS

##### Inclusions

Number of patients with heart failure (HF) from the denominator who are currently on an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB)\*

\*Patients with HF who are currently on one of the following medications: "Currently" is defined as documented on the day of the visit, OR within the past 5 months, OR on last recorded medication list.

ARB		ACE	
Generic Name	Trade Name	Generic Name	Trade Name
Losartan	Cozaar	Captopril $\pm$ hydrochlorothiazide (HCTZ)	Capoten, Capozide
Losartan/HCTZ	Hyzaar	Enalapril $\pm$ HCTZ	Vasotec, Vaseretic
Valsartan	Diovan	Lisinopril $\pm$ HCTZ	Prinivil, Zestril, Zestoretic
Valsartan/HCT	Diovan/HCT	Benazepril	Lotensin
Irbesartan	Avapro	Fosinopril	Monopril
Irbesartan/HCT	Avalide	Quinapril	Accupril
Candesartan	Atacand	Moexipril	Univasc
Telmisartan	Micardis	Ramipril	Altace
Eprosartan mesylate	Tevetan	Trandolapril	Mavik
Olmesartan	Benicar	Amlodipine + Benazepril	Lotrel

#### Exclusions

It is not expected that all patients with HF be on ACE inhibitors. However, ACE inhibitors are often underused even when they are appropriate. Relative contraindications include:

1. history of intolerance or adverse reactions to these agents,
2. serum potassium greater than 5.5 mEq/L,
3. symptomatic hypotension (unless due to excessive diuresis),
4. severe renal artery stenosis.

#### NUMERATOR TIME WINDOW

Fixed time period

#### DATA SOURCE

Administrative data  
Medical record

#### LEVEL OF DETERMINATION OF QUALITY

Individual Case

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Rate

#### INTERPRETATION OF SCORE

Better quality is associated with a higher score

#### ALLOWANCE FOR PATIENT FACTORS

Unspecified

#### STANDARD OF COMPARISON

Internal time comparison

### Evaluation of Measure Properties

#### EXTENT OF MEASURE TESTING

Unspecified

## Identifying Information

### ORIGINAL TITLE

Percentage of adult patients with a diagnosis of heart failure who are on an ACE inhibitor or ARB at discharge, or before/at the time of the clinic visit.

### MEASURE COLLECTION

[Heart Failure in Adults Measures](#)

### DEVELOPER

Institute for Clinical Systems Improvement

### ADAPTATION

Measure was not adapted from another source.

### RELEASE DATE

2003 Jul

### REVISION DATE

2005 Jun

### MEASURE STATUS

This is the current release of the measure.

This measure updates a previous version: Institute for Clinical Systems Improvement (ICSI). Heart failure in adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2004 Feb. 83 p.

### SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Heart failure in adults. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2005 Jun. 111 p. [198 references]

### MEASURE AVAILABILITY

The individual measure, "Percentage of adult patients with a diagnosis of heart failure who are on an ACE inhibitor or ARB at discharge, or before/at the time of the clinic visit," is published in "Health Care Guideline: Heart Failure in Adults."



This document is available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).

For more information, contact ICSI at, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; phone: 952-814-7060; fax: 952-858-9675; Web site: [www.icsi.org](http://www.icsi.org); e-mail: [icsi.info@icsi.org](mailto:icsi.info@icsi.org).

## NQMC STATUS

This NQMC summary was completed by ECRI on April 6, 2004. This NQMC summary was updated by ECRI on July 29, 2004 and again on September 12, 2005.

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